

**GOVERNOR'S OFFICE OF HIGHWAY SAFETY &
ARIZONA PROSECUTING ATTORNEYS' ADVISORY COUNCIL**

Present

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NHTSA STUDIES & APPLICATION IN ARIZONA

Presented by:

TOBIN SIDLES

Oro Valley Legal Services Director

Distributed by:

ARIZONA PROSECUTING ATTORNEYS' ADVISORY COUNCIL

1951 West Camelback Road, Suite 202

Phoenix, Arizona 85015

ELIZABETH ORTIZ

EXECUTIVE DIRECTOR

NHTSA (and other important) publications and studies for DUI cases

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NHTSA Studies

- Helpful NHTSA documents on-line

NHTSA Studies

My personal NHTSA favorite:
 "Challenges and Defenses II" #8737-030812-v3

This study (8737-030812-v3) is a NHTSA publication that lists and provides responses to common defense challenges.

Great reference how to respond to common defense ploys.

(Author ?)

NHTSA Studies

- Includes how to argue against the Ambien defense, tips for handling the DUI case with under a therapeutic dose in their system, the diabetes excuses, blood draw junk science claims, etc.

NHTSA Studies

- It includes GERD (Gastroesophageal Reflux disease) publications and studies that show how utterly unlikely that is in your breath case.
- Kechagias, S., Jonsson, K, Franzen, T., Andersson, L. & Jones, A. reliability of breath alcohol analysis in individuals with gastroesophageal reflux disease. *J Forensic Sci* 1999; 44 (4): 814-8

NHTSA Studies

It also includes relevancy arguments to instruments source codes challenges.

The publication itself lists all the references if you want to print out the original.

NHTSA Studies

- NHTSA Studies -Traffic Stop

NHTSA Studies-Driving

The most well-known and used NHTSA study?

"The Visual Detection of DWI Motorists"
DOT HS 808 677.

NHTSA Studies

- Its been around a *really* long time. The judges know it already we don't need to even bother to present the original study to the Court.

NHTSA Studies

- Big mistake! Think of *Livingston* and *Colin*.
- As prosecutors we all think of the term "weaving". What is the actual DWI detection guide category entitled? (Problem in maintaining proper lane position). Weaving is just one of the many behaviors in that broad category.
- At the very least it gives you great material for an appeal.

NHTSA Studies - FST's

- STUDIES ON THE FIELD SOBRIETY TESTS

NHTSA Studies- FST's

- The Foundational NHTSA studies! These were used For the SFST battery (also used for DRE basis)
 - # 1 -Fort Lauderdale Study(1975)-Checking various existing techniques, officers failed to detect 78% of the DUI violators they investigated. (The main reason NHTSA developed the HGN/SFST studies.)

NHTSA Studies –FST’s

- #2 -California Study (June 1977)-*Psychophysical tests for DWI Arrests* The Southern California research Institute (SCRI), directed by Dr. Marcelline Burns, -Tasked with developing a battery of test (SFST's) that could increase the ability of police officers to remove impaired drivers from the roadway. Three tests found to have a high reliability for distinguishing over a .10 BAC. The HGN-77%, the WAT-68%, and the OLS-65%. Combining the HGN and WAT = 80%. Done in a controlled environment.

NHTSA studies – AZ Application

- AZ is different than many other states! We can't tie an alcohol concentration to the WAT and OLS (See *State ex rel McDougal v. Albrecht*, 168 Ariz. 128(App. 1991); *State v. Campoy*, 124 Ariz. 132, 149 P.3d 756 (App. 2006) even though it was tied into in the validation studies. Since we can't say that 2 or more cues on the WAT and OLS indicate greater than a .08 BAC, the validation studies do not place any limits on our ability to admit FST evidence.

NHTSA Studies- FST's

- And????
- *State v. Superior Court (Blake, RPI)*, 149 Ariz. 269, 718 P.2d 171 (1986) also held that Rule 702 does not apply to the regular FST's (Meaning the WAT and OLS). And any argument on compliance has to be under Rule 702. If Rule 702 doesn't apply, we should never have to show compliance with the studies to admit the FST's.

NHTSA studies

- The defense challenge flip side
 - Because the validation studies studied and validated the fact that 2 or more cues on the WAT and OLS indicate a BAC of above .08, The studies were not actually studies for impairment and we can't elicit testimony that the FST's or the cues on them indicate impairment, or are even signs of impairment.

NHTSA Studies

- Blake (supra) indicated that the reason that Rule 702 does not apply the these FST's is that these FST's are not scientific. They are based on common knowledge. So we don't need validation studies. But AZ case law clearly says we can use to show impairment. (See *State v. Campoy*, 124 Ariz. 132, 149 P.3d 756 (App. 2006) "The results of FST's are admissible as relevant evidence of a defendants impairment." Quoting *State ex rel Hamilton v. City of Mesa*, 165 Ariz. 514 n.3 (1990); *Fuenning v. Superior Court*, 139 Ariz. 590, 599 (1983).

NHTSA Studies-Foundational

- # 3- California Study 1981 (Lab and Field)
- SCRI conducted a second SFST study. The first test showed these were reliable in lab conditions. This set of tests showed that they were also reliable out in the field. This study validated the SFST's. Officers were able to classify 81% of the test subjects with respect to having a BAC above .10.

NHTSA Studies

- # 4 -Maryland, District of Columbia, Virginia, North Carolina 1983 Field Study
 - SCRI (M. Burns) Testing to determine if environmental conditions could affect the reliability of the test. Adverse weather had no effect on them. It also standardized the administration and scoring procedure for the three test battery.

NHTSA Studies-Foundational

- # 5 - Colorado Study-1995
 - SCRI and Dr. Burns revealed that snow, cold and slightly sloped sidewalks did not effect an officers ability to make the correct arrest decision. Involved seven agencies with well trained observers. Showed that officers using the SFST battery made the correct decision 93% of the time. Corroborated by breath testing. Study to used officers who were already trained in using SFST's.

NHTSA Studies

- Other Defense Plays normally used to attack FST's





NHTSA studies

- Counter the following plays by bringing the previously listed studies to the courts attention and making the following arguments.

NHTSA Studies FST's

- Defense Claim - If the officer is not perfect, FST's should be given no weight
 - So did the officer make it easier or tougher?
 - Almost nothing the officer does will induce signs of impairment
 - Use breath/blood test for HGN-corroborates the officer was correct
 - Include NHTSA study Colorado study reiterates robustness of battery even by non-perfect field testing

NHTSA Studies

- Defense Claim - Can't give SFST's if over 65 or a bad back/knees
 - Original Studies only say may have difficulty with OLS / WAT
 - Study does not say do not give them at all
 - The study says give FST's to ALL drivers
 - Your officers should be able to testify that they are trained to take this into account (may have difficulty) not that they can't do them.

NHTSA Studies – bad back

- Use Judge's/Juror's common sense
- Where is the subject having difficulty? Tests call for both mental and physical tasks, a bad back doesn't stop both.
- None of this impacts the HGN test at all
- Did the suspect complain of the physical ailments at the time or when asked?

NHTSA studies

- Defense Claim - Defense argues you can't give SFST's if person over 50 pounds overweight.
 - This only applies to the OLS. (Previous mental/physical arguments also apply here.)

NHTSA studies

- Defense Claim -Defense argues you can't give SFST's if 2 inch heels or greater
 - Original study indicated there may be difficulty doing the WAT and OLS. Remedy - allow them to take their shoes off! Most officers do this.
 - Did the officer ask if their shoes were comfortable?
 - Argue poor judgement and impairment if they leave them on along with the previous arguments.

NHTSA Studies

- Defense Claim - Defense argues must have real line for the Walk and Turn FST.
 - The manuals say real or imaginary line (ARIDE only designates a straight line)
 - The line impacts only a small part of the test
 - Officers training and experience
 - Previous arguments

NHTSA Studies

- Biggest reason to submit that studies to the Court. Not just one study created this testing scheme.
- (Important later) Defense can't match this.

NHTSA studies-application

- Your Argument- from 1975-1981 the three test battery was developed (with funding by NHTSA following many studies). Training was developed by NHTSA and this 3 test battery is used by officers in all 50 states. The first study showed an 76% correct determination by clearly non-experienced officers, a second study showed 81% correct decision. (Later studies with experienced officers show over 90% in roadside conditions.)
- (Remember- These tests were developed at that time to find drivers with BAC's over .10)

NHTSA studies

- Defense argument- But all those studies were for higher BAC's and my client is a .08!

NHTSA studies-Colorado

- In 1995, a re-examination of FST's was undertaken by McKnight to correlate effectiveness of lower BAC's (.08). This found "no other measures or observations offer greater validity for BAC's of .08 or higher."
- The 1995 Colorado Study found that the validity of SFST's by experienced officers indicated greater than 90% (as we previously said) proficiency of decisions to arrest as confirmed by blood/breath analysis and confirmed the battery effective to .05 BAC.

NHTSA Studies -Florida

- Florida study- 1997
 - SCRI and Dr. Burns. Officers with an average of 9.5 years of experience conducted the 3 test battery. 95% of the officers decisions were correct. Validated that the three test battery can be used by officers to show impairment at .08 BAC.

NHTSA Studies-San Diego

- San Diego study 1998- SCRI and Dr. Burns. Used trained officers. Showed officers made the correct arrest decision 91% of the time with no observers and allowed to use PBT's. Found that HGN is the most reliable indicator with 88%, WAT was 79% and OLS was 83%. Study provided support for arrest decision at .08 BAC.

NHTSA Studies

- FST's HAVE been validated for the .08 BAC and lower. Don't let the defense attorney argue something misleading that the tests are not valid for some lower reading.

NHTSA Studies

- Defense Argument ploy – My client was just really, really tired!

NHTSA studies –Citek

- Your response – see *Sleep Deprivation Does Not Mimic Alcohol Intoxication on Field Sobriety Testing* – Dr. Karl Citek et. al, October, 2011
- Two sets of participants, those with a full nights rest and those deprived of sleep 24 hours. Both dosed with alcohol and tested. Conclusion-The number of validated impairment cues goes up as the alcohol level goes up, but not with sleep deprivation. Sleep deprivation alone does not effect motor skills like alcohol

NHTSA Studies

- Defense Argument- I have a Boating Under the Influence case. FST's don't apply!

NHTSA Studies- Watercraft

- Some FST's have been validated for boaters!
- The best test found was the HGN, followed by the finger to nose and palm pat/hand coordination tests. (Can't do OLS and WAT on a shaking boat- have to go to shore for those). If go to shore-other studies apply!
- See *Validation of Sobriety Tests for Marine Environment*, D. Fiorentino, So. Cal R. I (2010)

NHTSA Studies- HGN

Horizontal Gaze
Nystagmus Test



NHTSA tests – attacks by defense

- Defense Attacks on HGN
 - The officer conducted the test too fast!
 - The officer conducted the test too slow!
 - The officer can't truly estimate 45%!

NHTSA Studies

- HGN Robustness Study -2007 (M. Burns)
 - Variations in stimulus speed
 - Optimal speed center to side is 2 seconds
 - Going slower has no effect
 - Going faster = possible false NEGATIVE errors (Helps the defendant)
 - Manuals also recognize that prior to 45 degrees- use the full four seconds because if you move too fast you...may miss it (helps the defendant).

NHTSA Studies- HGN Robustness

- Variations in stimulus speed were not the only issue studied, but also the elevation of the test given and the distance from the face. Again, is not a problem. Reported problems only helped the defendant as it made the officers miss the cues (with the exception that if you hold the stimulus 10 inches instead of 12 inches away, it increases the number of correctly observed cues). However, officer safety considerations require the 12 inch distance.

NHTSA Studies- HGN Robustness

- That same study also looked at variations in the participants positions (Sitting, standing, lying down. They found it had no statistically significant effect.
- It also studied participants who have functional vision in only one eye. It found HGN was reduced in the bad eye, so don't rely on those, only the good eye.

Other Studies – HGN Robustness

- *Nystagmus testing in intoxicated individuals*- Dr. Karl Citek, et al, November 2003.
- Citek is an ophthalmologist and expert on HGN. He studied HGN and VGN at different positions (sit, stand, lie down). He confirmed the validity of the HGN if the person is standing, and found that if the person is sitting, there is only more danger of a false negative (helps the defendant).

NHTSA Studies – For Prosecutors

- The bottom line - Get copies of the appropriate studies and submit them to the Court. It is much harder for a Court to decide against the clear scientific evidence presented by the studies. If the studies are submitted, you are also in a much better position for appeal.

NHTSA studies

- The latest NHTSA drinking survey?

NHTSA Studies- DUI alcohol - 2014

- Percentage of weekend nighttime drivers above .08 by BrAC in Five National Roadside Surveys (Year and percentage)

1973	-	7.5
1986	-	5.4
1996	-	4.3
2007	-	2.2
2013-14	-	1.5

NHTSA Studies- DUI Drugs



NHTSA Studies-Drugs

- Fun fact ?- Recently, DUI drug charges issued exceeded those issued for DUI alcohol.

NHTSA Studies-Drugs

- Studies to know- Start with the DRE program. Include the same three studies listed earlier for establishing the FST battery.

NHTSA Studies –John Hopkins

- The DRE Program studies argument - In the 1980's LAPD started a fledgling DRE program. NHTSA was asked to evaluate it for reliability. NHTSA, with John Hopkins University, did a study in 1984 and developed a protocol. Given 15 minutes, the officers had to determine if the volunteer was impaired by drugs. The DRE's were 90% accurate. NHTSA Pub. No. DOT HS 806 753 (1985)

NHTSA Studies – 173 Case Study

- In 1985 NHTSA conducted a field validation Study of the LAPD DRE program. The study is usually called "the 173 case study". 94% of the time a drug other than alcohol was found as verified by John Hopkins when the DRE's stated the suspect was impaired by drugs.

NHTSA studies –AZ DRE study

- The DRE program was exported to other states, including Arizona. In 1994 the Drug Recognition Expert (DRE) validation study (Eugene Adler AZDPS, M. Burns-Southern California Research Institute) and a final report was sent to the Governors Office of Highway Safety. Go to table 7, p.41- DRE is 90% correct identification for marijuana! And that was on of the lowest percentages.

NHTSA studies

- Marijuana cases- Defense claims FST's not validated for marijuana or other drugs so they don't show impairment.
- Wrong – FST's were a part of the DRE program. The entire program was validated by the studies.

NHTSA Studies- Cannabis

- *Drug Recognition Expert (DRE) Examination Characteristics of Cannabis Impairment* Rebecca L Hartman, et al (July 2016)
 - Results-Finger to nose with over three misses best indicator. Eyelid tremors better than an 86.1% predictor. Recommend overall FTN over 3 misses, MRB eyelid tremors, OLS sway, 2 WAT cues. If 2 or more out of 4, impaired.

NHTSA Studies- Marijuana

- Also see the *Extended Urinary Delta-9-Tetrahydrocannabinol Excretion in Chronic Cannabis Users Precludes use as a biomarker of new Drug Exposure study* Ross H. Lowe, et al, (July 2009) regarding how long certain markers stay in your system.

NHTSA studies

- The defense's main study-Kane, *The methodological quality of three foundational law enforcement drug influence evaluation validation studies*, Journal of Negative Results in Biomedicine 2013, 12:16
- The problem with this study- It never attempted to duplicate, it just attacked the other studies for unrealistic methodology reasons.

NHTSA studies

- You need to attack this study by pointing out the criteria proposed by their study was unrealistic in a real life testing situation. For example, their study selects "selection bias". The original FST NHTSA studies were unreliable because they did not "enroll a series of consecutive drivers stopped by police." In other words, for the study the police needed to illegally stop drivers or illegally DUI investigate everyone they stopped. It also ignored the nighttime driving cues study. Our studies are validated over and over in real life. Theirs is just ivory tower theory with no other study.

NHTSA Studies- drugs

- The last study to be aware of is NHTSA's *National Roadside Survey 2013-14*
- 5th survey since 1973. Clearly shows the number of drivers testing positive for alcohol was lowest since testing started in 1973
- Bad, Number of those weekend nighttime drivers with marijuana increased almost 50% since 2007.

NHTSA Studies-drugs

- Refer to the marijuana studies presented earlier in this seminar.

NHTSA studies

- No doubt NHTSA will be conducting more studies on drugged driving (already starting on new three test battery for drugs?). Go to the NHTSA website and keep up with Beth Barnes mailing list!

NHTSA Studies

- Questions?
- Materials by Beth Barnes
- Presentation by Tobin Sidles
(tsidles@orovalleyaz.gov)
